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The Science of Healing. The Art of Caring

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The Science of Healing.

The Art of Caring.



SENIOR THESIS PROJECT:

PHYSICAL THERAPY INTERNSHIP

By: Annie Marshall

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Science behind the Movement

In the broadest sense, dance can be described as the artistic form of nonverbal communication. However, this doesn't exactly delve into the essence and culmination of mind and body centering. From the course, *To Dance Is Human*, Martha Graham states that dance occurs when "the whole human body is involved in the complete process" (Graham, 2005). In this interaction of mind and body, human beings sense, perceive, and act in accordance with one another. Some may argue that looking at dance primarily through a scientific lens degrades its fundamental nature. Without the science behind the movement, the human body doesn't exist; the mind-body connection doesn't exist.

Dance is embodiment, "feeling the force that is in this body" (Johnson, 1995, p. 185). According to Judy Scalin, professor of Fundamentals of Dance Composition, dance is the use of energy, time, and space (Scalin, 2004-2005). Furthermore, dance is the experience that encompasses full awareness of mind-body connection and the "internal force" that Johnson mentions in his book, *Bone, Breath, & Gesture: Practices of Embodiment*.

In understanding this idea of mind-body connection and how it relates to the fundamental principles of dance, it is important to start at the beginning of development to direct the unfolding of the functioning body. In *Anatomy and Physiology*, Todd Shoepe lectured on the perception of stimuli from the twelve cranial nerves, each playing a role in the senses, movement, and organ activity (Shoepe, 2005-2006). As the human cell develops into a fetus, these cranial nerves myelinate in order to protect the neuron-chemical events that take place within the firing of the neurons. The first of these to become myelinated is the vestibular nerves, which register the movement of the fetus and its environment (Shoepe, 2005-2006). Even in the beginning stages of life, movement is a means for survival. Linda Hartley explains this in her book, *Wisdom of the Body Moving*,

where she believes that “through movement, the fetus’ nervous system develops, awareness of itself and its environment begin to emerge, and a foundation for future learning and modes of interaction and response is established” (Hartley, 1995, p. 27). In other words, movement begins in the early stages of life and shapes the child’s physical, emotional, sensory, psychological, and perceptual development. Awareness matures throughout the remainder of the life, just as awareness of our body in relation to dance is a never-ending process.

Movement of the body is the primary action that occurs when one dances. Johnson, author of the book *Bone, Breath, & Gesture: Practices of Embodiment*, points out that the first encounter of movement is through its perception, which establishes the baseline for learning and developing other perceptions (Johnson, 1995, p. 197). However, the registering of movement does not only involve perception says Rory Natividad, professor of Therapeutic Modalities in Sports Medicine, but also a sensation that occurs throughout the central nervous system (Natividad, 2007). Rory Natividad explained the idea of sensory receptors in his Therapeutic Modalities course, where mechanoreceptors, proprioceptors, nociceptors, and thermoreceptors function differently in order to respond to a variety of stimuli by the activation of nerve fibers. The distinction can then be made that perception involves interpretation of sensory receptors by the high brain centers, such as the hypothalamus, cerebellum, and motor cortex (Natividad, 2007). Johnson states the differentiation much simpler by stating that “sensing is the more mechanical aspect, involving the stimulation of the sensory receptors and the sensory nerves” (Johnson, 1995, p. 195). In contrast, “perceiving is about one’s personal relationship to the incoming information” (Johnson, 1995, p. 195). This relationship of incoming information is unique to each individual, where it intertwines both motor and sensory components. In this view,

dance or movement is seen as a subjective experience due to the various bodily sensations and perceptions that take place with each individual being.

In Laban Analysis, Damon Rago proposed the notion of energy or effort, defining it as how the body concentrates exertion by means of four motion factors as points of reference. These factors are flow, weight, space, and time (Rago, 2005). Furthermore, Physics with Doctor Vincent Coletta clarified the principle of gravity as all matter being irresistibly pulled toward the center of earth, which in turn, gives everything weight (Coletta, 2006). Now how does this connect to the body? Take, for example, the inner ear. According to Johnson, the inner ear contains otoliths and cilia that when stimulated aid in the perception of “where our head is in relationship to the earth” (Johnson, 1995, p. 198). It also is a necessity in terms of aligning postural tone throughout the body, which is reflective in the quality of one’s movement. At times, when one is experiencing an inner ear infection, balance is often hard to obtain while trying to dance. This relationship is involved in the postural tone of our body, which therefore, affects our overall movement patterning and potentials. As dancers, “we deal with a kind of effortless and efforting—giving in to gravity, resisting gravity, and using gravity to add to power to gesture” (Scalin, 2005). It is in the process and physics of gravity that dancers identify, analyze, and undergo the Effort Qualities involved in movement analysis.

Space is another component of dance studied in Judy Scalin’s Fundamentals of Dance Composition course. Moreover, Damon furthered our understanding of space by relating it to kinesphere, or the size of one’s movement sphere (Rago, 2005). This concept of kinesphere encompasses both the physical sense of the word, meaning the space in which the mover inhabits, as well as the psychological interpretation of the space the mover senses as his/her own (Rago, 2005). Continuing with the previous example, the

inner ear functions to receive information from both the brain and movement receptors by assisting in the recollection of where each part is in relationship to one another and how the movement qualities vary through space (Johnson, 1995, p. 199).

The last element of dance is time and is described as the attitude toward how one approaches whatever the duration of time is (Scalin, 2004-2005). Again, this is a quality of movement and can be explained further by the demonstration of the inner ear. In Anatomy and Physiology, Professor Shoepe lectured about the semicircular canals and their involvement in detecting acceleration changes by means of the hair cells known as accelerometers (Shoepe, 2005-2006). Furthermore, Johnson explains these canals as registering the "changes in velocity as the head moves through space" (Johnson, 1995, p. 199). Because velocity is defined as speed with a direction, the inner ear is also involved with these changes in time. The inner ear is, of course, only one example in the body of how the connection between the functional attributes of the ear coincides with the elements of dance.

The last aspect involved in the mind-body connection is the action behind the movement. In Ethics class, Robin Wang defines an action as what an agent can do. This agent is achieved through bodily movement where the intent behind the action was guided by the agent. It, however, is not something that happens but rather something that has an aim and is done by an individual (Wang, 2007). This same principle goes for an action in dance, where we are able to focus or direct our ultimate goals through movement. Because there is an overabundance of stimuli from the constant firing of nerve fibers, the primary function of the motor neurons are to "choose which aspects of incoming stimuli we will absorb and attend to" (Johnson, 1995, p. 199). In many circumstances, the individual may revert back to past experiences, often resulting in unconscious or involuntary actions.

Even though actions are done instinctually, it is important as a dancer to become fully aware of one's actions and attain a deeper connection with oneself. With this being said, action can also be a result of conscious stimuli. Johnson states that "in order to achieve a deep relationship with oneself, with another person, and with the environment, it is necessary to experience one's total person consciously in stillness, in movement, and in contact with the physical environment" (Johnson, 1995, p. 274). In all technique classes, teachers are constantly referring back to "muscle memory." Muscle memory is therefore, the collaboration of unconscious and conscious thought. In the beginning, muscle memory must be a learned action accompanied by the synaptic transmission. As time goes by, this once voluntary action becomes instinctual and essentially autonomic with practice. Though dance strives for proper alignment, which involves muscle memory, it also attempts to include conscious bodily movements. Martha Graham sums these points up extraordinarily when she says that "dance is a moment of passionate, completely disciplined action which communicates participation to the nerves, the skin, and the structure of the spectator" (Martha Graham, 2005). This disciplined action is the muscle memory and conscious awareness that is the fourth aspect of the mind-body connection.

In conclusion, dance is the interaction between all systems of the body and mind. Without sensation, perception, and action, the body is not able to process or experience what it means to dance and be fully human. Through the elements of dance, which are space, effort, and time, dancers are able to understand how the body functions in accordance with movement. Conscious and unconscious thought are constantly influenced and shaped by our experiences. Furthermore, in the book, *Thinking Through Confucius*, Hall and Ames state that "a person stimulates and refines his own sense of what is physically right, and can appropriate it for himself" (Hall & Ames, n.d.). Physical sensations

allow for the adaptation of expressional movement in order to experience what feels “physically right” in the body.

During these mind connections, dance becomes satisfying once the person finds the sensation of what it feels like to be an individual at that moment in time. Dance is never the same at any moment. There are constantly new neurological pathways and movement qualities and because individuals are always in a different state of thought, emotion, and physicality, dance and/or movement is never the same. Additionally, Hartley concludes:

At every moment cells in our body are dying, undergoing transformation, and new cells are being created. There is continual movement and reorganization going on at this fundamental level, beyond our conscious knowing, yet within the realm of the wisdom of cellular life. Everything about us, even the structure of our seemingly dense and solid bones, is subject to change and hence to readaptation or transformation. (Hartley, 1995, p. 112)

Not only is the human body in a constant transformation process, but everyone, particularly dancers, are constantly adapting to new patterns of breath, movement, and stillness. By incorporating all of the mind interactions, our awareness of self becomes homeostatic, and equilibrium between the mind-body connections is established.

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Personal Aesthetic Statement

When reflecting upon my four years at Loyola Marymount University, I have realized that my interpretation and meaning of dance has changed ten fold. Not only have my experiences shaped and changed my movement qualities and execution, but I have a deeper understanding of dance in terms of the science of movement and dance as an art through an audience member as well as a choreographer. My goal over the past four years has been to embody these two principle components of dance, science and art, in order to create and develop my skill as a dancer.

Before studying dance at the college level, I felt that it was all about the competition world. I remember sobbing about how I would miss the performing aspect of my high school years and doubting my abilities to learn more as a "concert dancer." For me, as a freshman at LMU, the competition world was all I knew and my emotional involvement to the music was how I portrayed myself. Fortunately, after a few short months, I was exposed to foreign movement ideas and ways to vocalize dance that were never taught in the studio world. In Fundamentals of Composition, dance started to evolve into an intelligent and artistic expression of myself. At this moment, I became intrigued by the complexity of the human body and was eager to learn more.

As I began to further study the human body in both dance and science classes, I soon realized the correlating factors between the two. From the beginning of my time here at LMU, professors have constantly been on me to use my breath as a means to initiate movement. By discovering the physiological parameters of the respiratory system through Anatomy and Physiology, I was able to grow in the use and application of breath as a guiding force and energy in my dance technique. As I further explored by breathing patterns, my breath became my driving strength and a prominent factor in other areas of

my life. Furthermore, it got my out of my studio interpretation of dance and allowed me to create movement based on a necessity of life—breath.

Another important aspect that I have encompassed over the past semesters is experience. Just as the human body is consistently undergoing changes whether it be anatomically, emotionally, or psychologically, the experience at each moment in life is completely different from any other. Our DNA and genetic makeup may stay the same, but the cells are continuously being changed and shaped into new identities. This principle is exactly what occurs in dance. One day we may have an epiphany and activate a muscle that was never activated before, where the next day our epiphany may be to simply just get through the most gruesome class because of the emotional and mental state of that day. We are simply different at every second; therefore, our movement is different at every second and can never be completely reciprocated.

But in all honesty, if we are constantly engaging in new experiences, how do we ever truly come to recognize and identify who we are and what we can become? This year, more than ever, I struggled with this concept, specifically in my attempt to choreograph a solo. After hours of trying to create movement that was unique and earth-shattering, I realized that my insecurities and emotions were hindering my art. I had teachers to whom I admired a great deal tell me that I must stop using my face as a means for expression. My movement should be enough to tell the story, not my face. With this disturbing and stabbing critique, I decided to take a closer look at myself. Who am I as a dancer, a friend, a performer, a scientist, a daughter, a sister, and as a person?

In contemplating upon my growth from my studio days, I found a characteristic that followed me throughout my various genres of dance and this was my emotional expression. Whether it be modern, tap, or ballet, I found a connection between the

expressive side of me and the physical sensations that were transpiring in my movement patterns. It didn't matter if there were words accompanying the music or whether it was a beautiful instrumental piece—I was the dancer who was aroused and sensitive to the experiences my body was undergoing. When given the critique that I had too much emotive expression, I realized that this wasn't something that I would turn on and off lightly. It was there, it was real, and it was genuine. By accepting this gift of expression as part of my aesthetic, I was able to look past the critiques of others and love myself in the moments of experience. I could appreciate my expression of movement for the sake of movement without passing judgment or questioning my ability to craft my art.

Not only does composition play a role in my artistic journey, but also the tasks and skills of watching dance. As a person who is fascinated with the biomechanical and physiological make-up of the body, I find myself observing and watching others in all areas of my life. One of my most favorite parts as an audience member is observing and analyzing the muscular activation of movement. By studying the mechanical principles of kinematics and kinetics, the body becomes this gorgeous instrument that is unique to each person. In a way, the science behind the movement becomes the art itself. The breath and the musculature of the body are the expressive tools that allow for these inimitable experiences.

In closing, the body resembles a foundation for endless possibilities. In my opinion, no one can ever fully comprehend or imagine the experiences that I have, just as I can never fully grasp the experiences of another human being. However, we can begin to understand how the science of movement transforms dance into an art form. For me, this scientific discovery of art has been a journey that involves breath, expression, and

experience. Without these aesthetic factors, I would not be the dancer, performer, or person that I am today.

Summaries of Dance Studies

DANC 100: Orientation to Dance

Fall 2004, Judy Scalin

- Begin to increase movement capacity by understanding physical strengths and weakness, as well as mental and psychological awareness.
- Learning how and when to use the support resources and systems that Loyola Marymount has to offer.
- Considering the wide variety of careers after college with a Dance Degree.
- Creating a fun, playful, and judgment-free environment with peers of the same interest areas.

DANC 160: Fundamentals of Dance Composition I

Fall 2004, Judy Scalin

- Develop a sense of exploration within the self as well as the community by dancing together, speaking together, watching each other, and coaching each other.
- Understand the basic elements of dance aesthetics (time, energy, and space) and use this vocabulary in the composition of individual and group works.
- Discover new ways to play with creativity and perform these new skills.
- Explore and initiate new ways for cultivating movement, i.e. reviewing sculptures to influence organic movements.

- Begin the inward journey of finding and discovering one's own aesthetic by becoming a fuller human being by these five actions: awareness, attention, intention, action, and reflection.
- Apply all of the principles we have learned to life outside the dance studios and begin to understand the connection of knowledge and everyday life.

DANC 161: Fundamentals of Dance Composition II

Spring 2005, Judy Scalin

- Continuing the process of dance composition from the previous semester, but looking further into the assessment of one's own work.
- Finding works or poems to inspire movement, such as Haiku studies.
- Applying the same principles with music added and understanding how this affects the nature of your performance.
- Creating a portfolio where written entries express the Cognitive-Aesthetic Domain, Affective Domain, and Kinesthetic-Domain of learning experiences.
- Incorporating ideas of how the work done in this class relates to other University Dance Classes.
- Providing correlation material with courses outside of dance and/or life experiences in general.
- Reflection throughout the course on the elements of dance, choreographic process, aesthetic principles, and assessment of aesthetic successes.

DANC 260: Laban Movement Analysis

Fall 2005, Damon Rago

- Considering and studying the theory of movement through knowledge, exploration, experimentation, and play.
- Developing physical skills in the Bartenieff Fundamental Patterns of Total Body Connectivity and exploration of Laban's fundamentals of Body, Effort, Shape, and Space.
- Engaging in improvisation with both peers and individual works in order to observe, analyze, and discuss movement in terms of the Laban and Bartenieff vocabulary learned in class.
- Continuing to cultivate the self through the deepening of self-confidence and esteem by accepting the limitations and capabilities of the individual's body.
- Demonstrating the ability to work with peers in a nurturing, trusting, and giving environment.

DANC 261: Styles and Forms

Spring 2007, Scott Heinzerling

- Continue to expand on Laban vocabulary while applying this to various choreographic works throughout the semester.
- Finding and exploring ways to combine art, music, dance through theme and variations.
- Engaging in the development of one's own aesthetic through spoken words, either self-written or poem, as well as using a variety of different rhythms.

- Combining creativity and critical thinking in order to have effective thinking by using methods for finding solutions throughout one's works.

DANC 281: History of Dance Theatre

Spring 2006, Jill Nunes-Jensen

- Understanding a variety of styles in dance in relation to their historical context involving time period and place.
- Evaluating and analyzing movement in film by applying learned vocabulary and comparing the gender roles, sexuality, social, and political ideals of the film.
- Distinguish between a variety of genres and important characters in the dance world.
- Increase ability to critique a performance.
- Appreciate the art of dance by understanding what it means to dance, who can dance, how one can dance, and when one can dance.

DANC 381: To Dance Is Human: Dance, Culture, and Society

Fall 2005, Judy Scalin

- Introduction of body-mind-soul awareness when understanding the history and culture of people.
- Comparing the American experience of dance to other cultures and art forms by attending various performances in the Los Angeles area as well as partaking in a variety of videos about different cultural knowledge.

- Cultivating and analyzing one's own cultural through symbols as well as storytelling in order to encourage learning in a variety of different mediums.
- Hearing and moving in new ways that encourage the studying of individuals' stories and human experience.
- Finding the balance and connection of individuality of body-mind to the outside world and community.
- Continue to use and understand the elements of dance and laban vocabulary and further exploring new ways to investigate and integrate these sensory experiences.

DANC 484: Principles of Teaching Dance

Spring 2006, Teresa Heiland

- Understand the principle to dance pedagogy, including educational theory, motor learning, and biomechanical principles.
- Analyzing skills, methods, and instructional procedures for the classroom, where emphasis is placed on curriculum development, proper course sequencing, implementation of teaching strategies, and classroom management techniques.
- Formulation of teaching lessons as well as grant proposal knowledge for dance in the education system.
- Exploring new ways of working with individually, with partners, and in groups.

DANC 498: Drumming for Dancers

Fall 2007, Monti Ellison

- Understand the principles of hand drumming and learn to apply musicality to our dancing.
- Expansion of knowledge of music in phrasing, keeping time, and executing appropriate rhythmic patterns.
- Practice skills within a group as well as individually to recognize a greater awareness of hand drumming and rhythm.
- Learning about cultural influences in music and acquiring knowledge on five polyrhythmic traditional and semi-traditional rhythms.

Ballet

Fall 2004-Spring 2008, Christina Brunk, Heather Lipson, Lisa Marie-Goodwin, Scott Heinzerling, Tekla Kostek

- Develop skills and vocabulary as a basis for technique through understanding proper alignment, body/mind connection, and artistic expression.
- Increase strength, turnout, stamina, efficient use of energy, and flexibility to be used as a fundamental basis in all dance forms.
- Use and increase the knowledge and understanding of the body and how it works to provide assistance in our creative artistic expression.
- Acquire the ability to analyze technique verbally as well as finding a greater awareness of one's own potentials.
- Execute the desired combinations with focus, intent, and enjoyment.

Modern

Fall 2004-Spring 2008, Damon Rago, Yvette Wulff, Holly Johnston, Karen McDonald

- Cultivate the eye for movement analysis from two different perspectives: functional/anatomical and aesthetic/artistic.
- Continue to focus on functional alignment while still applying deliberate experimentation with the movement as well as dynamic qualities.
- Understand and improve improvisation skills and gain a sense of confidence in one's own artistic celebration of the self.
- Apply concepts and body awareness from other classes to this class as well as corrections given by the professor.
- Find the willpower and passion for risk-taking.
- Strengthen, heighten, and create through own interpretation and rigor.

Jazz

Fall 2004-Spring 2008, Paige Porter, Jason Myhre, Denise Leitner (other working jazz dance professionals)

- Learn and challenge students to pick up movement quickly and with clarity.
- Gain a better sense of getting a job, working in a professional setting, and obtaining the most out of every audition.
- Expansion of knowledge, improvement to analyze, and challenge through exploration are key elements to jazz technique.
- Continue to work and expand vocabulary for this class as well as other technique classes.
- Increased strength, stamina, musicality, coordination, flexibility, and articulation.

- Finding and cultivating dance as an expressive art form and finding room for the development of personal integrity.

Tap

Fall 2004-Fall 2007, Denise Scheerer

- Articulation and clarity of tap sounds and vocabulary.
- Applying knowledge of coursework to writing and testing.
- Understanding musicality and basic fundamentals of music, such as counting, phrasing, and keeping time.
- Cultivating the performance qualities while learning more advanced tap skills.
- Improvement on improvisation with and without music.

World Dance

Fall 2005, Dance of Ireland: Marie Clerkin

- Acquire knowledge for Irish dancing through movement analysis and verbal examination.
- Cultivate and understand where, how, and why Irish dancing came to be.
- Execute the fundamental principles of Irish dancing with integrity and enjoyment.
- Create own phrases based on vocabulary and skills from class work.

Yoga for Dancers

Fall 2006-Spring 2007, Holly Johnston

- Identify and understand basic principles of yoga by practicing asana's various sequences.
- Demonstrate physical and mental efficiency in postures and the ability to maintain a steady flow of breath.
- Cultivate the muscles to support during the appropriate postures.
- Know the body's limits and push past the idea for complacency.
- Analyze, speak, and identify the Sanskrit names for each asana.
- Regulate and balance energy while becoming fully aware of functional and physiological perspectives.

Dance Conditioning

Fall 2004, Teresa Heiland, Yvette Franco

- Understand the basic principles of proper alignment through Pilates and Bartenieff Fundamentals.
- Explore cross-training, injury prevention and attention, and new ways for caring of a dancer's mind/body connection.
- Develop awareness of personal physical limitations/challenges as well as strengths.
- Analyze and execute desired exercises through verbal and written means of expression.

Pilates Lab

Fall 2005-Spring 2008, Jan Dunn, Teresa Heiland, Yvette Wulff, Lizzy Mulkey

- Individualized attention on specific challenges from dance work or daily living.

- Increased strength and flexibility in particular areas of interest.
- Increased focus on proper alignment, stability, and injury prevention and restoration.
- Provide individuals with encouragement of learning.

**Kinesiology was not taken through the Dance Department, so was not included in this

Summary of Dance Classes.

Bachelor of Science with a Major in Natural Science, emphasis in Pre-Physical Therapy:

List of Classes

Fall 2004:

- MATH 122: Calc Life Science I
- PSYC 100: General Psychology

Spring 2005:

- MATH 104: Elementary Statistics

Fall 2005:

- NTLS 151: Human Anatomy and Physiology I
- NTLS 152: Human Anatomy and Physiology I Lab

Spring 2006:

- BIOL 102: General Biology II
- BIOL 112: General Biology II Lab
- NTLS 153: Human Anatomy and Physiology II
- NTLS 154: Human Anatomy and Physiology II Lab

Fall 2006:

- PHYS 253: General Physics I
- PSYC 332: Psychological Disorders
- NTLS 360: Upper Extremity Evaluation

Spring 2007:

- PHYS 254: General Physics II
- PSYC 352: Developmental Psychology
- NTLS 355: Exercise Physiology
- NTLS 356: Exercise Physiology Lab
- NTLS 362: Lower Extremity Evaluation

Fall 2007:

- NTLS 455: Advanced Nutrition
- NTLS 456: Advanced Nutrition Lab
- NTLS 460: Therapeutic Modalities in Sports Medicine
- NTLS 490: Natural Science Teaching
- NTLS 495: Allied Health Internship

Spring 2008:

- NTLS 485: Biomechanics
- NTLS 490: Natural Science Teaching
- NTLS 495: Allied Health Internship

****The following courses were taken for transfer credit:**

BIOL 101: General Biology I

BIOL 111: General Biology I Lab

CHEM 110: General Chemistry I

CHEM 111: General Chemistry I Lab

CHEM 112: General Chemistry II

CHEM 113: General Chemistry II Lab

Allied Health Internship Reflection Paper:

Fall 2007

Over the summer I had the opportunity to work with physical therapists at Marina Physical Therapy. Each of them had different mechanisms and ways for treatment that were applied to their various patients. I was able to get 60 hours done in one month's time, where the experiences made me grow immensely. Since I had never really experienced this work first hand, I was apprehensive at beginning this new opportunity.

After the first day of work, I realized that I had a lot to learn about the therapeutic modalities that were commonly used. Before this day, I knew a little bit about an ultrasound, but not enough to know the proper settings that it entailed. Electric stimulation, laser therapy, diathermy, and biofeedback mechanisms were all foreign to me. One thing that helped me get through the first day was this rehabilitation aspect of the patient's appointment. Because of my background in dance, the Pilates related exercises were very familiar to me, so I was able to help some of the patients with proper alignment and activation of the proper muscles.

Throughout these few weeks here, I learned many new ideas about the body. As the therapists massaged patients, I was told that the skin should be loose and "bubbly." If the skin sort of wrinkles and seems sticky, then this can indicate tightness within that area caused from something, such as scar tissue. There was one Achilles post-surgery patient that came in regularly. For her, the therapist would have to use a theraband to massage the area because the oils in the hands and ankle made it difficult to get deep enough. This patient was getting a full ankle replacement and needed the skin to stretch around the ankle, so the massaging was supposed to help for this reason. Swimming was another

recommendation from the therapist because the moisture from the water allows for the skin to release.

Another observation that I made while working here was that many of the therapists used soft tissue massage before performing the exercises in order for the patient to find more range of motion. When trying to undergo a myofascial release, one should first isolate the muscles when massaging and then cross the motion to enable the fascia to be more mobile. I found this to be the most painful type of massage with the patients.

This internship also helped me to understand the importance of biomechanics. Eva constantly reminded me that if the patient reverts back to their bad habits, then they will not heal properly by using proper alignment. One idea she had for me was to pay attention to gravity. It seems simple but it plays a huge effect on a person's posture and the strength needed to push against it. Furthermore, body awareness is a key component to understanding proper alignment. For me, this idea happens intrinsically because of my background of using my body as art and constantly exploring my body in space. However, this clinic really showed me how the average Joe has a hard time understanding the activation of proper muscles. One of Eva's patients had to be "re-taught" how to stand and walk primarily because of bad biomechanics throughout her lifetime.

There are three ways I found to be most successful for retraining the body into using different muscles. One was the use of a biofeedback apparatus because it enabled patients to know when they were using the appropriate muscles. The idea behind this is to create a muscle memory for the body to be able to stimulate the same response. The second mechanism I found to be beneficial for the patient involved tapping the desired activation site. By doing this prior to an exercise, the muscles that one is activating allows for a proprioceptive experience that involves the cultivation of the muscle group. The third

way that was beneficial was the use of tape. By using tape, the body recognizes a different mode of mechanics and often takes the pressure off the area that is feeling the pain.

As I had mentioned, electric stimulation was a new modality for me. I would like to reflect on some of the ideas that I learned with this machine. First off, there are a variety of settings that have to be taken into an account with whatever the desired intention is behind the treatment. Interferential current involved two channels, where the electrode placement resembled a crossed pattern. The electrodes were placed so that the center of the cross was where the affected site was occurring. On the other hand, Russian current was a form that caused a contraction of the muscle and was placed parallel on the muscle that needed activation. Russian was mainly used for muscle strengthening and muscle re-education.

By attaining this internship, I was able to see and understand how a physical therapist interacted with their patients. Since I have never had to partake in physical therapy, this was a new and exciting experience for me. Because I had taken Upper and Lower Extremities prior to this internship, seeing how SOAP came into play was intriguing. It is so important to assess the previous treatments and note how the patient is feeling each time they come into the clinic. Another item that is vital in the healing process is knowing what the patient has or has not been doing in order to conquer their issue at hand. By developing a trusting relationship, the patient will feel more inclined to tell the truth and also a better communication pathway will be set. There were numerous patients that told me that the Marina Physical Therapists were one of a kind because they listened to the patient's needs. Eva stressed the importance of assessing what works and doesn't work with each patient. She also informed me that what makes a good physical therapist

is to throw out the books. Many times therapists are book smart but don't have the capacity or understanding to cater to the patient's needs.

At the completion of my hours, Eva encouraged me to continue with this profession because she felt I had an instinctual understanding of the patient's needs. Coming from her was an extreme compliment for me because she was the type of person who wouldn't sugar coat things. I feel that this job allowed me to gain confidence in a field that I have been studying for the past three years and further my growth of knowledge by applying the lessons that I have been taught. The hands-on experience was extremely beneficial for the way in which I learn.

Throughout the course of this semester, I have been helping out Mavis Rode, the physical therapist for the LMU Dance Program. This has been the perfect internship because it provides me with the experience and clientele that I ultimately want to work with someday. The atmosphere was comfortable, which promoted an anxiety-free workplace.

Because of my prior internship with Marina Physical Therapy, I felt more confident in the use of modalities. Ultrasound, infrareds, and electric stimulation were the main choices that the Wellness Lab had to offer. However, one setting of electrical stimulation that Mavis commonly used was microcurrent. This form of stimulation aids and enhances cellular healing. If the patient begins to feel any type of pain, the intensity should be lowered or else the effects of the treatment are not the same. The electrode placement is as follows: one placed on the injured site and the other placed close by. Mavis told me that she normally uses microcurrent for a patient who has been dealing with a lot of pain and swelling for an extended amount of time. It is normally not used for acute injuries and also depends on how large the injured area is.

The other modality that I learned a lot about was ultrasound. Mavis used the same setting for the most part on all of her patients: 1.0 intensity and pulsed (or duty cycle) at 50%. The MHz varied depending on the desired depth of penetration and area on the body. The duration of treatment also varied from patient to patient but was usually between five and eight minutes.

Overall, these internships have allowed me to understand the mechanisms and ways in which a therapist provides a diagnosis for the patient. They have used tied together all courses that I have taken for my Natural Science major, such as patient history, mechanisms of injury, and the performance of manual muscle testing and special tests. By working in the Dance Wellness Lab setting, I have found my own friends and fellow students to ask questions more frequently about their bodies and issues regarding injuries. It provides me with great gratitude to know that my fellow dance majors trust me enough to ask my opinion when one gets hurt. For instance, in the dance concert this past month, a student got an extreme spasm in her gastrocnemius. The first person our teacher called was me. By developing these skills and working with well-trained professionals, I have felt a lot more confident in answering questions that people have. I feel that this clinical experience is extremely valuable in the process of studying physical therapy.

Allied Health Internship Reflection Paper:

Spring 2008

For this semester, I chose to continue my internship working in the LMU's Dance Wellness Lab here on campus. I was, again, under the direct instruction of Mavis Rode, where I observed her practice as a Physical Therapist to many of the Program's dancers. I also worked with Teresa Heiland during rehabilitation times where dancers would come in to strengthen particular areas in their bodies. Over the course of the semester, I was able to gain 60 hours in working with both parties.

Since I had previously worked with Mavis in our Wellness Lab, I felt much more comfortable with the way she ran her practice. This semester I found myself asking why she chose certain modalities and the significance she found in each one. Many of the injuries that she treated were acute injuries with pulled or inflamed muscles being the primary injuries. In these circumstances, we used ultrasound to treat the patient, where the settings were usually 50%, 3 megahertz, and about 8 minutes depending on the area. The only time we really used 1 megahertz was when injuries of the back occurred. This was needed in order for the sound waves to travel to deeper tissues.

Another method that was fairly new to me was her use of kinesiotape. Normally after a treatment, she would clean the area and dry it. Then she would apply some sort of tape for proprioception purposes. Since many of the dancers came back from week to week, I was able to hear if the tape benefited their daily movements or if it had no effect at all. I would say that about 66% of the time, patients came back saying that the tape helped them find awareness of the injured area during their dance classes. The remaining one-third found that it was irritating and actually didn't stay on while dancing. Overall, I

feel that if the kinesiotape is applied properly, it can serve as a valuable factor in the patient's rehabilitation process, providing a sense of awareness.

At the beginning of the semester, I suffered from an injury to my lower extremities. I felt as if the muscles were pulling off my tibia during any sort of dorsiflexion or plantar flexion motion. For me, I diagnosed myself as having shin splints, even though I had never experienced this before. After a few appointments with Mavis, I came to realize that there was something causing these shin splints—knots in my gastrocnemius. Once we were able to massage these out with both a tennis ball and manually, my shin splints went completely away.

When looking back on my experience, I realized that it is important as a physical therapist to understand the activities and changes that are likely to cause injuries. In my incident, I figured that this was just from working out a lot over break or an overuse injury from jumping in dance classes. However, one of the main reasons for my shin splints was that I had not stretched out my calves after an intense dance class and continued to further tighten my lower leg muscles. It was through Mavis's questioning at each appointment that I was able to comprehend the importance of subjective patient history.

In observing Mavis, I feel like she does a great job in trying to get all the information without assuming it's a particular injury. Many times I jump to conclusions and say what I think the injury is right off the bat. However, she has taught me that you can't do this without evident proof. This was exactly the case in my circumstance. If I had been the physical therapist, I would have treated the patient for shin splints by using ultrasound and taping. However, this has shown me that there are many other underlying factors that must be considered, which can be done by talking with the patient. I wanted to practice asking questions, so as I would administer the ultrasound, I would talk to the patient and

find out how long ago this injury happened and the mechanism to which this injury occurred. This not only got me used to asking specific questions, but it also enabled me to work on my people skills in terms of drawing out information with patients who have a quieter demeanor.

Another component of her work involved watching the alignment and posture of each patient. Mavis would often have the dancers stand in front of a mirror in order to visually see the changes that they were sensing in their bodies. One observation that I consistently noticed with dancers was the increased lordosis of the lumbar region during normal stance. To me, the reasoning behind this seems to be that they use their core so much during class that they tend to release it during normal standing and sitting postures. Mavis works with dancers to keep and strengthen the abdominal muscles in order to maintain spinal integrity. It is also important to look at a person's breathing patterns. With this idea, Mavis would teach the patient how to breathe while maintaining abdominal firing and activation. Lastly, weak or relaxed abdominals is often coupled with an anterior tilt of the pelvis as well as weak hamstrings. Since these can all be fixed through a strength program, this is where Teresa's help comes into action based on the referrals made by Mavis.

The purpose of attending the Dance Wellness Lab to "work out" is to gain strength in the weak areas that Mavis observes during appointments. Like I had previously mentioned, we tend to work a lot on postural alignment in order to gain the optimal power in undergoing certain exercises. I had the honor of working with Teresa Heiland, who has a background in Modern dance, Bartenieff Fundamentals, and Pilates. Throughout my time with Teresa, I found that certain cues were given to the patients in order to activate and engage different muscles. For example, in one lesson, Teresa gave the cue to think about

the occipital bone lifting higher as opposed to the chin. This allowed for the dancers to feel a deeper engagement in their transverse abdominis.

Often times, the foam roller was a good tool in releasing some of the tensed and sore muscles. This was extremely helpful for one dancer in particular that had extremely tight pectoralis muscles. By lying on the foam roller, she was able to open up the anterior side of her body. Within two months time, I noticed a significant difference in the way in which this person carried herself. Prior to her work in the Wellness Lab, she had rounded shoulders, which made her look a lot shorter than she actually was. Throughout her progress of expanding the anterior chest of the body, she looked as if she had grown three inches by the end of the semester. After talking with Teresa about her advances, I learned an important thing, which was that just because someone is tight in their pectoralis muscles, for instance, this doesn't mean that these muscles are strong. It could actually be weak muscles caused by postural alignment, which was the case for this dancer.

I think that many times, I assume that tightness in an area means a person was working really hard in an activity and is gaining strength. In actuality, this may not be the case at all. It is important to recognize the daily activities that a person undergoes in order to decipher whether the muscle tightness is caused from functional or structural alignment issues. In my previous example of pectoralis tightness, it was crucial for this dancer to stretch her pec region everyday as well as to strengthen it.

Overall, my internship has allowed me to gain a hands-on experience with the modalities that I would normally only learn about during my academic classes. It provided me with substantial information in regards to the postural alignment that encompasses our daily activities. It also allowed me to establish trust within the dancers of our program,

where they would come to me with questions about sensations that were occurring in their bodies. This was not only the case in the students, but also in a few of the professors.

Recently, in one of my dance classes, a student landed wrong out of a jump. My teacher immediately called me over to assist with her pain because she knew my background in working with Mavis. From my courses taken at LMU, I told her it sounded like a 5th metatarsal fracture since that is the most common site of fracture in the foot. After attending the emergency room, we came to find out that this was exactly the diagnosis. Having experiences where my fellow dancers and teachers are interested in my knowledge and course work has made me a more determined individual. This internship opportunity permitted me to combine my two passions—science and dance. I feel like my understanding of the complex human body has grown tenfold since I am able to actually observe the work being done by physical therapists. Working with Mavis and Teresa has confirmed my decision in working as a Physical Therapist for Dancers in the upcoming years. I have thoroughly enjoyed my time spent in our Wellness Lab and am excited to further develop my skills in the physical therapy field.

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Evaluation of Student Intern

Allied Health Internship NTLS 495
Loyola Marymount University

Name of Intern Annie Marshall

Marina Physical Therapy

Name of site or facility

4702 Lincoln Blvd. Marina Del Rey, CA 90292

Street address

City, state

Zip code

Jill Daddio / Eva Nemeth

Name of supervisor

P.T.

Title

Telephone

Email

Number of hours completed: 60

Please circle the number that best reflects the student with a 5 being the highest possible rating and a 1 being the lowest. Circle NA if the item is not applicable to the intern being evaluated.

Item of Evaluation	Lowest				Highest	
Dresses appropriately for the setting	1	2	3	4	5	NA
Arrives on time and is ready to participate	1	2	3	4	5	NA
Adheres to policies and procedures of the site	1	2	3	4	5	NA
Is respectful during all interactions	1	2	3	4	5	NA
Maintains confidentiality and privacy	1	2	3	4	5	NA
Seeks out additional learning experiences	1	2	3	4	5	NA
Demonstrates initiative, asks thoughtful questions	1	2	3	4	5	NA
Seeks support and feedback as needed	1	2	3	4	5	NA
Accepts constructive criticism when provided	1	2	3	4	5	NA
Makes recognizable effort to apply knowledge	1	2	3	4	5	NA
Is receptive to diversity of environment	1	2	3	4	5	NA
Performs clinical skills proficiently	1	2	3	4	5	NA
Recognizes one's own limitations	1	2	3	4	5	NA
Demonstrates effective communication skills	1	2	3	4	5	NA

Would you "hire" this student to do another internship at your site? Please explain why or why not.

Yes - Annie is a very compassionate, kind individual.
She also expressed a great deal of interest
within the field.

Are there any skills you wish your intern had further developed before beginning the internship? Please explain.

N/A.

Please comment on the student's strengths.

Dependable, compassionate, eager to learn.

Note: This form should be mailed or delivered in a sealed envelope with the signature of the supervisor across the seal or can be faxed directly to the number below.


Supervisor Signature

7/18/07
Date

Please return form to:

Dr. Jim Landry or Dr. Hawley Almstedt
Department of Natural Science
Loyola Marymount University
1 LMU Drive, MS 8160
Los Angeles, CA 90045-2659
Fax # 310-338-7882

Form 2 **LMU|LA**
 7/27/07 Loyola Marymount
 University

Department of Natural Science

North Hall
 1 LMU Drive, MS 8160
 Los Angeles, CA 90045-2659

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 Fax 310.338.7882
 www.lmu.edu

Evaluation of Student Intern

Allied Health Internship NTLS 495

Loyola Marymount University

Name of Intern Anna MarshallName of site or facility Wellness Lab, dance program - Dept. of Theater Arts & Dance

323 Foley, LMU
 Street address City, state Zip code

Maris Rode, PT Physical Therapist
 Name of supervisor Title

[REDACTED] [REDACTED]
 Telephone Email

Number of hours completed: 120

Please circle the number that best reflects the student with a 5 being the highest possible rating and a 1 being the lowest. Circle NA if the item is not applicable to the intern being evaluated.

Item of Evaluation	Lowest				Highest	
Dresses appropriately for the setting	1	2	3	4	(5)	NA
Arrives on time and is ready to participate	1	2	3	4	(5)	NA
Adheres to policies and procedures of the site	1	2	3	4	(5)	NA
Is respectful during all interactions	1	2	3	4	(5)	NA
Maintains confidentiality and privacy	1	2	3	4	(5)	NA
Seeks out additional learning experiences	1	2	(3)	4	5	NA
Demonstrates initiative, asks thoughtful questions	1	2	3	(4)	5	NA
Seeks support and feedback as needed	1	2	3	4	(5)	NA
Accepts constructive criticism when provided	1	2	3	4	5	(NA)
Makes recognizable effort to apply knowledge	1	2	3	4	(5)	NA
Is receptive to diversity of environment	1	2	3	4	5	(NA)
Performs clinical skills proficiently	1	2	3	(4)	5	NA
Recognizes one's own limitations	1	2	3	4	(5)	NA
Demonstrates effective communication skills	1	2	3	4	(5)	NA

Form 2
7/27/07

Would you "hire" this student to do another internship at your site? Please explain why or why not. Yes.

Dance students often drop by the Wellness Lab with questions about prevention & care of injuries. It can become very busy when several students need attention at the same time. Annie has been extremely helpful, as she has proven to be reliable & trustworthy. She takes direction well, & once given instructions, she can be counted on to carry out a task as directed.

Are there any skills you wish your intern had further developed before beginning the internship? Please explain.

No - Annie had sufficient familiarity with modalities that are used in the Wellness Lab. She is also familiar with the Pilates equipment that we use for rehab & conditioning of dancers. After working with me in the Lab, Annie now has a better understanding of clinical practice of Physical Therapy in a specialized outpatient setting.

Please comment on the student's strengths.

Annie is prompt & reliable. The dance students who are patients in the Wellness Lab are also Annie's peers in the dance program. Annie has always demonstrated respect & maturity in her interactions with these students.

Note: This form should be mailed or delivered in a sealed envelope with the signature of the supervisor across the seal or can be faxed directly to the number below.

Mavis Rode, PT
Supervisor Signature

12/05/07
Date

Please return form to:

Professor David Ramirez or Dr. Hawley Almstedt
Department of Natural Science
Loyola Marymount University
1 LMU Drive, MS 8160
Los Angeles, CA 90045-2659
Fax # 310-338-7882

Site Evaluation
Allied Health Internship - NTL 495
Department of Natural Science
Loyola Marymount University

Annie Marshall
Student Name

Marina Physical Therapy
Internship Site

4702 Lincoln Blvd. Marina Del Rey CA 90292
Address City State Zip

[REDACTED]
Phone (of site)

July 6, 2007 - July 24, 2007
Dates of Internship (from when to when)

1. Please describe the setting of your internship site? (outpatient/inpatient physical therapy, nursing, hospital, etc.) *This internship was held at an outpatient physical therapy office off-campus. There were about six tables, separated by pull-around curtains and an area to perform exercises for therapy.*
2. Were you provided with an orientation? If so, how well did it prepare you? *I had a brief meeting with both supervisors where I observed the practice and was told the jobs/tasks at hand. There was not an actual orientation, but I still felt fairly prepared for the job.*
3. Please describe the clientele were you exposed to? *The clientele ranged from 11 years old to 90 years old. Most of the people I helped with were about age 30 and up.*
4. How many employees did you interact with? *I interacted with all of the physical therapists (4) and the aids (2) that worked in the office because each had a different way of performing the desired exercises.*
5. How would you rate the staff morale? (check one)
 - ☒ Always high
 - ☐ Usually high
 - ☐ Occasionally high or low
 - ☐ Usually low
 - ☐ Always low

6. Did you have an opportunity to interact with a(an): (please mark with a check)

- ☐ Occupational therapist
- ☐ EMT
- ☒ Physical therapist
- ☐ Orthopedist
- ☐ Physician
- ☐ MRI center
- ☐ Chiropractor
- ☐ Podiatrist
- ☐ Nurse
- ☐ Physician's assistant
- ☐ Other health care professionals _____

7. Was there adequate space to accommodate your professional and personal needs?

Yes, there was adequate space for both the professional and personal needs.

8. Based on your past experiences, and your concept of the "ideal" internship setting, how would you rate this internship site?

- ☐ Very negative
- ☐ Waste of time
- ☐ Time well spent
- ☒ Very positive

9. Did you receive monetary compensation for your work?

- ☐ Yes
- ☒ No
- ☐ Some but not for all hours worked

10. Would you recommend this internship site to someone else? Explain why or why not.

I would definitely recommend this site to someone. All of the therapists were willing to explain why they were doing a certain thing and were nothing short of helpful. They all worked in different ways but found out what the patients needed and found ways to treat them. Each of them were fully dedicated to their practice and it was an honor working with them. All of the patients had nothing but compliments for this facility and therapists.